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Early yaws, imported in The Netherlands

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SUMMARY Early yaws in a 9 year old girl from Ghana, diagnosed as imported disease in The Netherlands is reported. She had lived in The Netherlands for six months. Tropical non-venereal treponematoses are rarely seen in Europe, and only a few case reports have been published. Migration and travelling may confront the medical profession with cases of tropical diseases such as yaws. Positive serological reactions in non-venereal tropical or venereal treponematoses cannot be distinguished at present.

Tropical non venereal treponematoses are rarely seen in Europe. Only a few cases of early yaws have been recently reported in Europe.[1–6] Owing to migration and travelling it is expected that more cases of this disease will be seen in Europe. Yaws is transmitted by non-venereal bodily contact, especially among school children under 15 years of age. Minor traumata (bites, wounds, abrasions) play an important role.[7] The microorganism causing this disease, *Treponema pallidum* subsp *pertenue (T pertenue)*, was discovered by Aldo Castellani in 1905 (Latin: pertenuis = very weak).[8] However, the close relationship of the causative agents of the treponematoses has so far made it impossible to distinguish them by serological means. The diagnosis is made on clinical and epidemiological grounds. Especially people living in the humid rural regions in the tropical zones around the world are at risk. After an incubation period of 9–90 days initial lesions appear. These are generally located extragenitally, often on the lower extremities, and have a (ulcero-) papillomatous appearance. These primary stage lesions are very rich in treponemes. Secondary lesions can appear after a latent period, but the primary and secondary stages can overlap. The period of latency may last the lifetime of the patient. However, some patients enter a destructive tertiary (late) stage after a variable period of time. Severe mutilations, such as gangosa or sabre tibia may develop in the late stage. No congenital form of yaws (as observed in syphilis) has been recognised.

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Case report

In March 1988 a 9 year old girl from Ghana was referred to the Paediatric Dermatological Out-Patient Department, Sophia Children's Hospital, Rotterdam, with swelling of the right half of the face and pustules on the body. She had previously been seen by the neurologist, in view of suspected paresis of the right facial nerve. Six months before, she had migrated from Ghana to The Netherlands. Two months after her arrival the skin lesions on her right lower arm were recognised.

On examination the patient was well nourished and apparently in good health. Generalised strawberry-like red-yellowish papulosquamous painless lesions, either moist or covered with crusts, were present (fig 1). On the right arm some remarkable, partly confluent, papillomata were observed (fig 2). The surface of the lesions was partly covered by yellowish scabs. Gentle scraping on the surface caused a friable haemorrhagic exudative lesion. On the right half of the tongue and face, a flat vascular naevus was seen.

The differential diagnosis included sporotrichosis, mycoses, leprosy, treponematoses, cutaneous leishmaniasis and sarcoidosis. Additional laboratory studies were performed. Dark-field examination of the exudate of the lesion on the right arm disclosed the presence of many motile treponemes. Serological tests gave positive results: TPHA positive, FTA-ABS 3+, VDRL positive, titre 1/16. Furthermore the ESR was 64 mm in the first hour, and eosinophilia was present ($0{\cdot}45 \times 10^9$/l).

Routine histopathology of a biopsy specimen taken from a papillomatous lesion on the right arm showed pronounced oedema of the epidermis, papillomatosis and intra-epidermal microabcesses. The silver impreg-

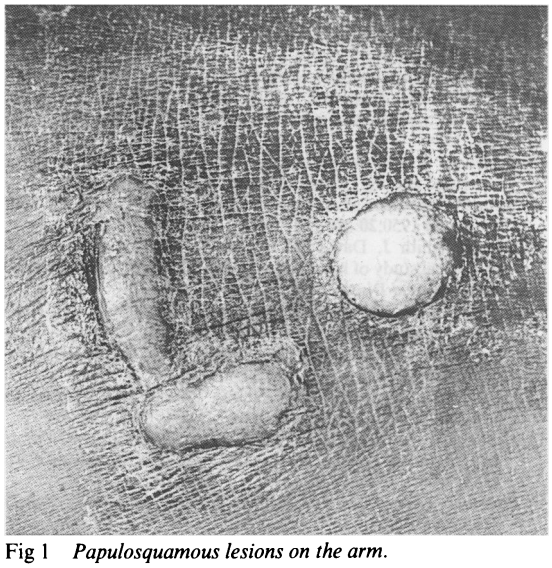

Fig 1 *Papulosquamous lesions on the arm.*

nation technique according to Steiner[9] revealed the presence of many treponemes. Blood vessels were not affected.

Radiographs of the right tibia and left fibula revealed periosteal new bone formation.

An extract was obtained from a second biopsy specimen and the extraction fluid, which contained motile treponemes, was injected into the testes of a New Zealand white rabbit with a negative syphilis serology. Serological screening of this rabbit gave positive results after three weeks. The blind passage of the testicular extract of this rabbit to a fresh rabbit with a negative serology produced mild orchitis with the presence of treponemes (positive dark-field examination) and seroconversion.

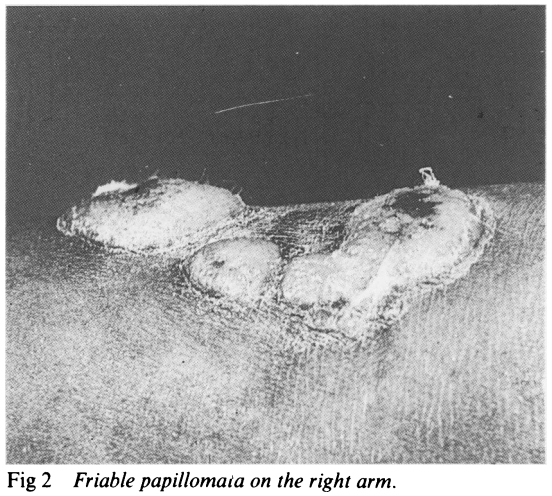

Fig 2 *Friable papillomata on the right arm.*

On clinical and epidemiological grounds and on the basis of the laboratory findings, the diagnosis of early yaws was made. The patient was given daily intramuscular injections of 900 000 units of procain benzylpenicillin (Bicillin[r]) for fourteen days, in view of possible neurological complications. Under this regimen all lesions rapidly disappeared. Examination of her contacts followed. Only her mother and brother were in Holland.

Of the contacts examined, her older brother was the only one with a positive serology. Prophylactic penicillin was given to brother and mother (single dose 2·4 million units benzathine benzylpenicillin (Penidural[r])).

Discussion

This girl developed yaws two months after arriving in The Netherlands. Four months later she consulted us when she was probably in the secondary stage. It seems most probable that she contracted yaws in Ghana shortly before she left that country. This case is fully comparable with the case described by Fry and Rodin in 1966.[2] The World Health Organisation recommends treating yaws with 600 000 units of benzathine benzylpenicillin for all cases and contacts aged under 10 years, and 1 200 000 units for those aged over 10 years.[7] The penicillin therapy given to our patient was therefore probably excessive, but we were confused by a possible facial nerve paresis and in doubt about neurological complications. In general it is assumed that no neurological abnormalities occur in early yaws. But in late yaws there are indications that, as in syphilis, neurological involvement may be encountered, as has been suggested by some authors.[10,11] Late yaws has been associated with asymptomatic CSF abnormalities, reactive CSF-VDRL tests, spinal meningovascular lesions, Jamaican neuropathy and tropical spastic paraparesis.[11] Besides neurological abnormalities, abnormal pupils, perivascular sheathing and optic atrophy have also been observed in late yaws.[10] We are not sure that there is no confusion between yaws and the other treponematoses in these publications.

The incidence of endemic treponematoses in the world was greatly reduced after successful mass penicillin treatment campaigns. In many countries yaws seemed to be eradicated but resurgence of the disease has been observed. In Africa, several reservoirs of yaws can be found. From many African countries no data are available at present.

In Ghana, treatment campaigns were held between 1956 and 1972.[12,13] A 12-fold increase of yaws in Ghana was described between 1968 and 1981.[14] A new campaign followed but still endemic foci exist. Also the disease is still endemic in other African countries and

may be more prevalent. In view of increasing migration one should be aware of the possible importation of yaws into Europe. Recognition of this infectious disease is important, but infectivity is only present in humid tropical areas. Still, millions of people living in endemic areas are susceptible to yaws, and transmission continues. In combination with campaigns against other diseases, treponematoses need attention.[15]

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